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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,789	09/07/2004	Norman Frederick Watson	038665.55259US	3503
23911	7590	04/14/2006	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			VU, MINDY D	
			ART UNIT	PAPER NUMBER
			2884	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/506,789	WATSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mindy Vu	2884	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/7/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

### **DETAILED ACTION**

This Office Action is in response to Applicant's application filed September 7, 2004.

#### ***National Stage Application***

The Examiner has considered the international preliminary examination report (IPER).

#### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 5 element 68.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 14 (Spec pg. 3 line 29, pg. 4 line 1, pg. 5 line 1).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

Art Unit: 2884

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it used the phrase "Described herein is an improved" can be implied. Correction is required. See MPEP § 608.01(b).

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the Applicant needs to give a clear description of what "N" stands for (Spec pg. 3 lines 20-27).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 3 recites "an effective surface emissivity of N%". It is unclear to the Examiner where this N is introduced and how to use it for what number of percentage of emissivity.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (US 5,602,389, hereafter Kato) in view of Kaufman et al. (US 6,476,392, hereafter Kaufman) and further in view of Smith (US 4,933,555).

With respect to independent Claim 1, Kato discloses an infra red detector calibration system (Abstract, for example Fig. 1) comprising a reference surface 10, temperature controlling means 14 adapted to maintain the reference surface at a desired calibration temperature, processing means 16 for receiving an output signal generated by an infrared detector 11 at said the desired calibration temperature.

Kato discloses the data processor 16 compares the output value of the sensor 11 with a predetermined ideal output signal for said desired calibration temperature (Col.3 lines 54-60). Kato lacks to disclose the step of calculating a calibration coefficient on the basis of the difference between the detector output signal and the ideal output signal at said desired calibration temperature. Kaufman discloses a temperature dependent focal plane array with a memory stores a calibration database which is comprised of an array of bias, gain and offset values and these values are used by analog circuit to correct the focal plane array response (Col. 2 lines 5-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the step of calculating a calibration coefficient with the suggestive offset values generated from the memory storage for the calibration data of Kaufman for correction errors.

Kato discloses a reference surface 10 but lacks a reference surface which comprises a plurality of hollow corner cubes which are partially reflective and partially emissive. Smith discloses a thermal imager having the retro-reflective region provided by a plurality of corner cube structures (Col. 2 lines 11-15 & Fig. 4). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the corner cube structures of Smith in the reference surface of Kato in view of the improved ability to determine detector-to-detector variations using such a structure (Col. 4 lines 31-36).

With respect to Claim 2, Kato discloses the emissivity of the reference surface is controlled by controlling the temperature of said reference surface (Col. 1 lines 14-20).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (US 5,602,389, hereafter Kato) in view of Karlsson et al. (US 5,572,312, hereafter Karlsson).

With respect to independent Claim 8, Kato discloses a method of calibrating an infra red detector (Abstract) comprising: a) presenting the reference surface at a known temperature to an infra red detector; b) measuring the output of the detector element; c) comparing the measured output of each detector element with a nominal output for the known reference surface temperature to determine a calibration error at the known temperature; and d) heating the reference surface to one or more further known

temperatures and repeating steps b) and c) to determine a calibration errors for each of the further known temperatures (Cols. 3-4 lines 1-67).

Kato discloses an infrared sensor 11 but lacks to include a plurality of detector elements and therefore measure the output of each detector element. Karlsson discloses a similar calibration system for an infrared camera using a detector and the detector is permitted to be in the form of a plurality of detector elements (Col. 8 lines 55-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a plurality of detector elements of Karlsson in the infrared sensor of Kato for detecting different temperatures of the temperature reference body.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (US 5,602,389, hereafter Kato) in view of Karlsson et al. (US 5,572,312, hereafter Karlsson) and further in view of Kaufman et al. (US 6,476,392, hereafter Kaufman).

With respect to Claim 11, Kato discloses the data processor 16 is supplied with an output value of the infrared sensor 11 and compares the value with a calculated infrared-rays intensity to calibrate the sensor (Col. 4 lines 13-16). Kato lacks the step of storing the calibration constants for application to readings obtained from the detector. Kaufman discloses a memory stores a calibration database which is comprised of an array of bias, gain and offset values and these values are used by analog circuit to correct the focal plane array response (Col. 2 lines 5-15). It would have been obvious to



one of ordinary skill in the art at the time of the invention was made to include a memory of Kaufman in the processor of Kato for tracking the values.

### ***Allowable Subject Matter***

Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest the step of calculating a function relating the output error of each detector element to the temperature of the reference surface.

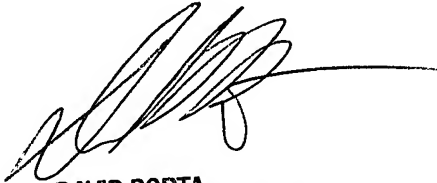
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mindy Vu whose telephone number is 571-272-8539. The examiner can normally be reached on M-F 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mv



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